

REMARKS

Claims 12-30 are pending. Claims 12, 16, and 24-30 have been amended.

1. Rejection under 35 U.S.C. § 103(a) based on Cathey '492:

Claims 24-29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 5,853,492 to Cathey et al. ("Cathey '492"). Applicant respectfully traverses this rejection.

Independent claims 24 and 26-29 each recite "a field emission display device" comprising, *inter alia*, "a current emitter comprising a current emitting surface." Independent claims 24, 26, and 28 recite that the "current emitting surface" comprises "doped silicon infused with nitrogen." Independent claim 27 recites that the "current emitting surface" comprises "doped silicon and deposited nitrogen." Independent claim 29 recites that the "current emitting surface" comprises "doped silicon and nitrogen deposited on the doped silicon." See page 3, lines 5-18; page 6, lines 21-22; page 7, lines 11-15; page 8, lines 2-4; and Figs. 4 and 6.

Cathey '492 discloses a method of removing oxide contamination from emitter tips using a dip solution. Cathey '492 does not teach or suggest a "current emitting surface comprising doped silicon," "infused with" nitrogen or having "deposited nitrogen" or "nitrogen deposited on the doped silicon." Independent claims 24 and 26-29 are patentable over Cathey '492. Claim 25 depends from claim 24 and is patentable over Cathey '492 for at least the same reasons.

2. Rejection under 35 U.S.C. § 103(a) based on Cathey '492 in view of Jones et al.:

Claims 12, 18, and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cathey '492 in view of U.S. Pat. No. 5,371,431 to Jones et al. Applicant respectfully traverses this rejection.

Claim 12 recites “a field emission display device” comprising, *inter alia*, “at least one current emitter formed of a doped silicon.” The current emitter comprises “a current emission surface comprising doped silicon infused with nitrogen.”

Cathey '492 discloses removal of surface oxides using a chemical dip. Cathey '492 does not teach or suggest a current emitter comprising “a current emission surface comprising doped silicon infused with nitrogen” as recited in claim 12.

Jones et al. has been cited as teaching doping of silicon. Jones et al. does not disclose the “current emission surface comprising doped silicon infused with nitrogen” missing from Cathey '492. Claim 12 is patentable over Cathey '492 in view of Jones et al. Claims 18 and 19 depend from claim 12, and are patentable over Cathey '492 in view of Jones et al. for at least the same reasons.

3. Rejection under 35 U.S.C. § 103(a) based on Cathey '492 in view of Jones et al. and Yamazaki:

Claims 13-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cathey '492 in view of Jones et al., further in view of U.S. Pat. No. 5,840,118 to Yamazaki. Applicant respectfully traverses this rejection.

Claims 13-17 depend from claim 12. Claim 12 is patentable over Cathey '492 in view of Jones et al., as set forth above. Yamazaki has not been applied against claim 12. Further, Yamazaki has been cited as teaching barrier films annealed to glass substrates in semiconductor manufacture. Yamazaki does not supply the Cathey '492

and Jones et al. combination with a current emitter comprising “a current emission surface comprising doped silicon infused with nitrogen” as recited in claim 12. Claim 12 is patentable over the asserted combination of Cathey ‘492, Jones et al., and Yamazaki. Claims 13-18 depend from claim 12, and are patentable over the combined references Cathey ‘492, Jones et al., and Yamazaki for at least the same reasons.

4. Rejection under 35 U.S.C. § 103(a) based on Cathey ‘492 in view of Jones et al. and Cathey ‘683:

Claims 20-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cathey et al. ‘492 in view of Jones et al., further in view of U.S. Pat. No. 6,020,683 to Cathey, Jr. et al. (“Cathey ‘683”). Applicant respectfully traverses this rejection.

Claims 20-23 depend from claim 12. Claim 12 is patentable over Cathey ‘492 in view of Jones et al., as set forth above. Cathey ‘683 has not been asserted against claim 12. Further, Cathey ‘683 has been cited for teaching a silicon grid under a metal layer. Cathey ‘683 does not combine with Cathey ‘492 and Jones et al. to arrive at a current emitter comprising “a current emission surface comprising doped silicon infused with nitrogen.” Claim 12 is patentable over Cathey ‘492 in view of Jones et al., further in view of Cathey ‘683. Claims 20-23, being dependent on claim 12, are patentable over the combined Cathey ‘492, Jones et al., and Cathey ‘683 for at least the same reasons.

5. Rejection under 35 U.S.C. § 103(a) based on Sandhu et al. in view of Jones et al.:

Claim 30 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 6,086,442 to Sandhu et al. in view of Jones et al. Applicant respectfully traverses this rejection.

Claim 30 recites a field emission display device comprising *inter alia*, “at least one current emitter formed of a doped silicon,” the current emitter comprising “a current emission surface comprising doped silicon infused with nitrogen.”

Sandhu et al. discloses field emission devices with metal nitride coated current emitters. Thus, the current emitters disclosed by Sandhu et al. have metal nitride current emitter surfaces. Sandhu et al. does not teach or suggest a field emission display device comprising “a current emission surface comprising doped silicon infused with nitrogen.”

Jones et al has been cited to supply emitter insulating layers that prevent stray radiation. Jones et al. does not provide the “current emission surface comprising doped silicon infused with nitrogen” missing from Sandhu et al. Claim 30 is patentable over Sandhu et al. in view of Jones et al.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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Respectfully submitted,

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